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AMERICAN CRATAEGI IN THE SPECIES PLANTARUM OF LINNAEUS.

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SINCE the publication last year in RHODORA (x. May, 1908) of Mr. Eggleston's notes on the species of *Crataegus* described by Linnaeus I have had the opportunity to examine again the specimens of *Crataegus* in the Plukenet Herbarium at the British Museum and the specimens of this genus preserved in Linnaeus's own herbarium.

Three of the four species of *Crataegus* described by Linnaeus in the first edition of the *Species Plantarum* are what may be called book species, that is there is no evidence that Linnaeus had ever seen a specimen of these plants when his descriptions were published in 1753, these having evidently been based on the descriptions and figures of earlier authors. Of the fourth species, *Crataegus viridis*, there is a specimen in the Linnaean Herbarium collected by Clayton in Virginia which Linnaeus may have seen before his description was written. Several years ago I made out that this specimen represented the plant described later by Elliott as *Crataegus arborescens*, although at that time this species had not been rediscovered in Virginia. It is interesting to report, therefore, that *Crataegus viridis* Linnaeus (*C. arborescens* Elliott) was found by Mr. Rehder last summer on the bank of the Blackwater River near Zuni in southeastern Virginia.

Crataegus Crus-galli was described by Linnaeus from Plukenet's figure and description. The specimen which appears to have served in part, at least, as the subject for Plukenet's figure (*Alm. Bot.* 149, t. 46, f. 1) is preserved in his herbarium. It is a young shoot without flowers and fruits, and although I suspect that it is not the plant which is now usually considered to be *Crataegus Crus-galli*, it is impossible

to say what it is except that it is from one of the *Crus-galli* Group of species. The specimen labeled *Crataegus Crus-galli* in Linnaeus's Herbarium is also only a barren shoot. It was collected by Kalm and no locality is given. It is certainly one of the *Crus-galli* Group, and probably represents a different species from the specimen in the Plukenet Herbarium. In spite of the doubt which these specimens raise on the identity of *Crataegus Crus-galli* of Linnaeus, it does not seem desirable or necessary to abandon his name as no confusion is likely to occur by retaining it.

It is not possible to guess even at the plant described by Linnaeus as *Crataegus tomentosa*. His species was based on the specimen collected by Clayton in Virginia and, unfortunately, this is one of the few of Clayton's specimens which is not preserved in the British Museum. On the sheet labeled *Crataegus tomentosa* in Linnaeus's Herbarium there are two specimens collected by Kalm without locality. One is evidently what is now generally called *Crataegus tomentosa* and the other is one of the thick-leaved *Tomentosae* species. It is of interest, perhaps, that there is a thorn on the first of these specimens as *Crataegus tomentosa* is usually thornless, although "*ramis spinosis*" appears in Linnaeus's description of his *Crataegus tomentosa*. As no confusion is likely to arise from retaining the name of *Crataegus tomentosa* for the plant now generally considered to be that species, there appears to be no good reason for abandoning the name.

Crataegus coccinea was established by Linnaeus on Plukenet's figure (*Alm. Bot.* t. 46, f. 4.). The figure well represents one of the three specimens so numbered preserved in Plukenet's Herbarium. The numbers published by Plukenet have been written below the specimens of his herbarium by some one now unknown and perhaps after the collection had become the property of the British Museum. Under the specimen which is the type of Linnaeus's *Crataegus coccinea* there is a note by Robert Brown confirming the determination. Mr. Eggleston's statement that the type of *Crataegus coccinea* was an unnumbered specimen found by Mr. Britten is not clear. All the specimens in Plukenet's Herbarium are numbered and Mr. Britten assures me that he has no recollection of having made such a statement. It is probable, however, that the fruit that he sent to Mr. Eggleston is from the specimen represented on plate 46, f. 4, as one of the seven fruits figured by Plukenet is missing. The leaves of this specimen are only slightly villose on the upper surface; the fruit is

glabrous and the pedicels are slightly hairy; and it cannot, as Mr. Eggleston has suggested, represent *Crataegus modesta*. The specimen is thornless and the detached thorn in the Plukenet figure may have been taken from one of the two other specimens in the Plukenet Herbarium which the same unknown person has referred to the plant figured on t. 46, f. 4. The thorns on one of these specimens are slightly thicker and on the other they are more recurved than that figured by Plukenet. These three specimens in the Plukenet Herbarium referred to t. 46, f. 3, certainly all represent different species either in the Molles or Lobulatae Groups, and I am unable to identify any of them. The matter is further confused by the fact that Linnaeus also referred to his *Crataegus coccinea* the plant figured in the *Hort. Angl.* t. 13, f. 1, which is *Crataegus cordata*. The specimen labeled *Crataegus coccinea* in the Linnaean Herbarium was from a plant cultivated in the Upsala Garden, and, being unable to determine any of Plukenet's specimens, it was this specimen that I formerly considered the type of *Crataegus coccinea* and referred to it a common species of the New England coast and the St. Lawrence Valley (see *Bot. Gazette*, xxxi. 11). Aiton's specimen of *Crataegus coccinea* in the British Museum is a barren shoot of some Molles species.

Under Rule 51 of the Vienna code it is provided in Section 4 that every one should refuse to adopt a name "when the group which it designates embraces elements altogether incoherent or when it becomes a permanent source of confusion and error." This is the case of *Crataegus coccinea*. Certainly the type of *Crataegus coccinea* cannot be determined and a large number of different species have at different times been called *Crataegus coccinea*. It appears therefore desirable to abandon the name entirely and to find a new name for the plant figured as *Crataegus coccinea* in *The Silva of North America* and in the *Manual of North American Trees*. A glabrous form of this which I have called *Crataegus coccinea rotundifolia* was first described in 1785 by Moench (*Bäume Weiss.* 29, t. 1) as *Crataegus rotundifolia*, which would therefore be the name of the species if the hairy and the glabrous forms are considered to belong to one species; and the hairy plant which I have described as *Crataegus coccinea* may then become ***Crataegus rotundifolia* var. *pubera*.**